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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,251	09/10/2004	Tetsuya Fudaba	SA 6014 (US)	9086
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Basell USA Inc. Delaware Corporate Center II 2 Righter Parkway, Suite #300 Wilmington, DE 19803				
EXAMINER				
MESH, GENNADIY				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/507,251

Applicant(s)

FUDABA ET AL.

Examiner

GENNADIY MESH

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 02/15/2007; 10/31/2007.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on March 10, 2008 is acknowledged.

Rejection is maintained as set forth in previous Office action, but altered due to amendment. Claims 1-6 are pending.

Claim Rejections - 35 USC § 102

1. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka (US 6,191,219).

1.1. Regarding Claim 1, Tanaka discloses polypropylene composition, comprising (see claim 1):

Component (A) - 50 – 90 wt.% of polypropylene component, including (see lines 40 – 60, column 2) homopolymer of propylene or copolymers with alpha – olefins, wherein alpha-olefin content is preferably less than 8 wt.% - this component has same composition as Applicant's component (A)

Component (B) – 3 – 40 wt.% of ethylene/ alpha-olefin copolymer, with ethylene content of 60 to 95 mole%, and molecular weight distribution (M_w / M_n), determined by gel permeation chromatography is less than 3 – this components reads on Applicant's component B2

Component (C) - 2 - 20 wt.% of propylene/ethylene/1- butane copolymer, wherein propylene content is 50 – 85 mole% - same as in Applicant's component B1.

1.2. Tanaka silent about viscosity ratios between components A,B and C.

However, viscosity range for component B (see line 50,page 4) is same – 0.5 to 5.0 dl/g - as viscosity for Applicants component B2 (see paragraph [0027], page 2).

Note, viscosity is inherent function of molecular weight and molecular weight distribution for polymers of the same chemical composition and can be also characterized by melt flow rate (MFR). Tanaka further discloses that preferable MFR range for component A is from 1 to 50 g/10min.(see line 20, column 3), which is fully encompasses range of 0.3 to 15 g/10 min, claimed by Applicant(see paragraph [0017], page 2); for component B (see line 35,column 2) is from 0.5 to 10 g/10 min., and for component C (see line 60, column 6) is from 0.1 to 10 g/10 min.

Thus, viscosity ranges and ratios determine by MFR or by actual viscosity measurement will be in the same ranges as claimed by Applicant in Claims 1 and 2. Burden shifts to Applicant to prove the contrary by presenting factual comparative results.

1.3. Tanaka further discloses that important parameter for component B, (see lines 1 to 45, column 4) indicated state of compositional distribution of structural units or randomness of chain distribution, which is equivalent of CSD or blockness, claimed by applicant in Claim 1 for same component (B2).

Tanaka explained that randomness (B-value) could be in a range from 0 to 2 :
“The B-value equals 2, when both the comonomer units are ideally alternating in the ethylene/.alpha.-olefin random copolymer, and equals to zero, when both the comonomer units are present in the copolymer as ideal block-copolymer by being completely separately polymerized.” (see column 4,lines 37-43).

Note, that range of B-value disclosed by Tanaka anticipate range of blockness values of 0.8 or less as it claimed by Applicant.

1.4. Presence of "heterologus bond" claimed by Applicant in Claim 3 is inherent property of all propylene copolymers and depend on implemented catalytic system and polymerization conditions. Tanaka discloses presence and importance of this type of microstructure for specific applications (see lines 45 – 65, column 7).

1.5. Tanaka silent regarding stereoregularity of component A claimed by Applicant in Claim 4. However, stereoregularity is inherent property of polypropylene component and depend on type of catalytic system and polymerization process used for manufacturing of a particular propylene polymer. Because Tanaka discloses that polypropylene resin (A) can be produced by processes with solid titanium or metallocene catalyst (see line 5-10, column 3), same as Applicant indicated in disclosure, than degree of stereoregularity will be identical for both polymers.

1.6. Tanaka also silent regarding morphology of obtained films from polypropylene composition, particularly about layers or needles, in specific sizes and aspect ratios as claimed by Applicant in Claim 5.

Again, phase morphology is inherent property of the composition and depends on compatibility of ingredients and relative quantities. Some production technique could alternate some aspects of phase morphology, but Applicant does not discloses or claimed any specific production technique. Burden shifts to the Applicant to provide factual evidence to the contrary.

1.7. Regarding Applicant's claim 6, Tanaka discloses that this composition specifically useful for superior non-stretched(good mechanical properties), transparent and impact resistant film.

Response to Arguments

2. Applicant's arguments filed March 10, 2008 have been fully considered but they are not persuasive.

Regarding Applicant's argument that Tanaka does not anticipate Applicant invention because:

1. "Applicant is claiming a propylene resin composition comprising... copolymer component B wherein.... **a blockness value of 0.8 or less** " - (see bottom of page 6 in bold)

Note, tat it was stated in rejection (see paragraph 1.3 above) Tanaka disclosed that randomness (B-value) could be in a range from 0 to 2.

For this reason, Applicant argument is not persuasive.

2. Applicant requested provide evidence to support Examiner statement (see rejection, paragraph 1.2) :

" viscosity is inherent function of molecular weight and molecular weight distribution for polymers of the same chemical composition and can be also characterized by melt flow rate (MFR)."

Evidence can be found in article of R. Lieberman et al." Polypropylene" on page 530:

"The length of the polymer chain has a significant impact on its performance, particularly its flowability. This is a critical parameter for downstream use of the resin. Direct

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measurement of the polymer chain is difficult and not suited to plant laboratories. Instead, polymer chain length is measured indirectly in several ways. For many years, the intrinsic viscosity (IV) of the polymer was measured. IV results were directly proportional to polymer chain length. That is, the higher the IV, the longer the average chain length.

While still used to some extent during the production of impact copolymers, intrinsic viscosity has been replaced with the much quicker and more repeatable melt flow rate (MFR). As the term implies, MFR is the weight of melted polymer that can flow through a specific orifice, under a standard load, at a given temperature and time.

Standard load = 2.16 kg

Standard temperature = 230°C (for very high MFR products, a lower temperature is used)

Standard time = 10 minutes

As would be expected, MFR results are the inverse of chain length. That is, polymers with long chain length will have a low MFR.

With the development of automated testing machines in the late 1970's, polymer MFR can be measured quickly with high accuracy and repeatability.

Hydrogen is added to the polymerization reaction to control the molecular weight (ie, chain length) of the polymer by acting as a chain-transfer agent. Hydrogen increases the activity of the catalyst. More hydrogen imply shorter chain and higher MFR.

Molecular Weight

Polymer vs. MFR

Polymer chain length (or molecular weight) is directly related to MFR. Laboratory work has shown the relationship to be closely approximated by the following formula:

$$\log MW \approx -0.2772 \times \log MFR + 3.7213 \quad (r^2 \approx 0.9780)$$

Thus, based on evidence provided by R. Lieberman correlation between Viscosity and MFR is proper.

For this reason, all Applicant arguments are not persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GENNADIY MESH whose telephone number is (571)272-2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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